University of Toronto

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COMPUTER SCIENCE

NEWSLETTER

No. 97

Edited by Mr. C. Alan Ford

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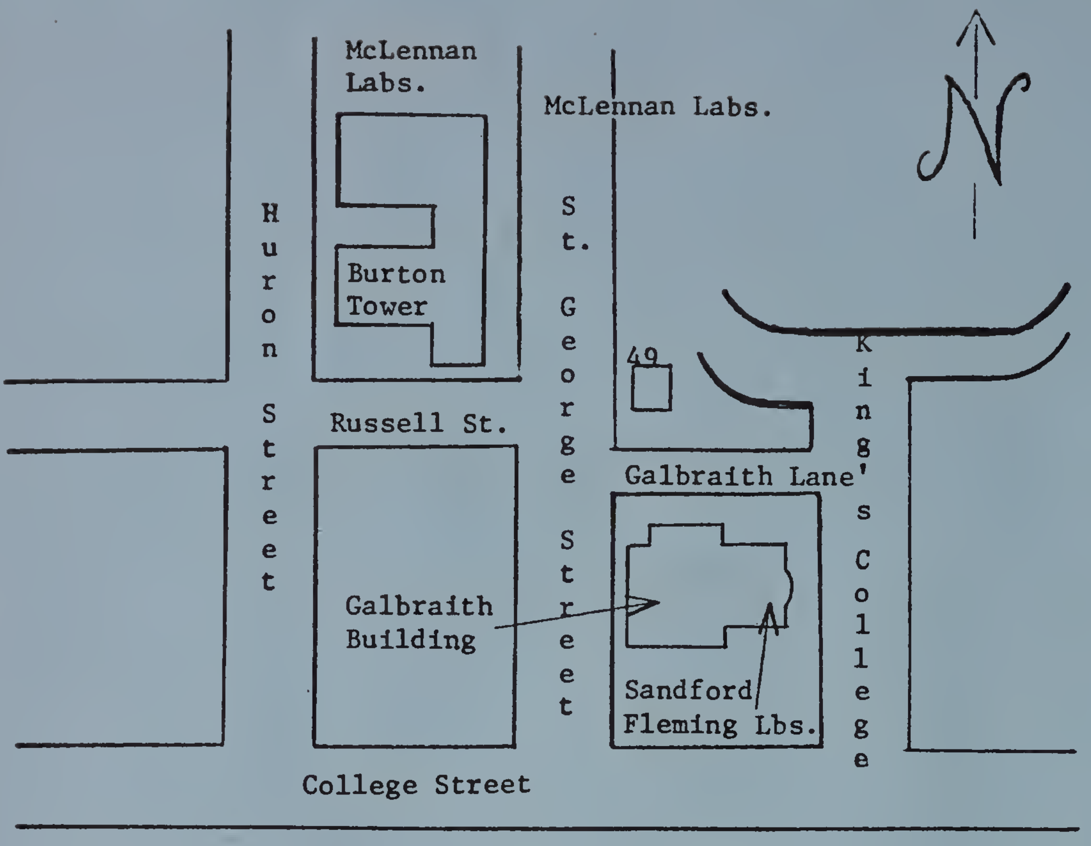
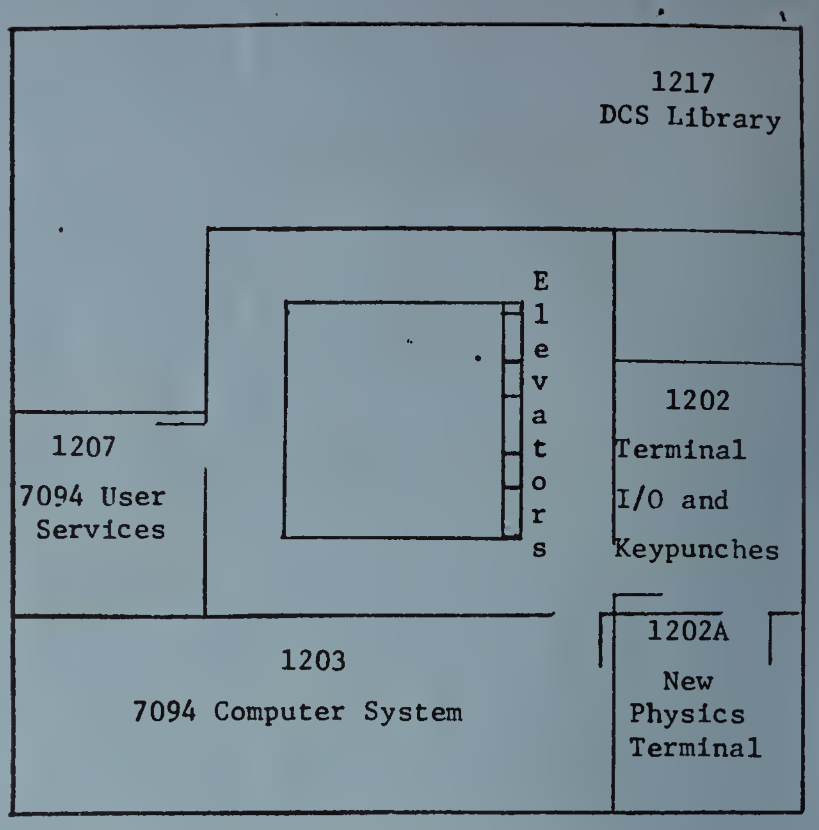
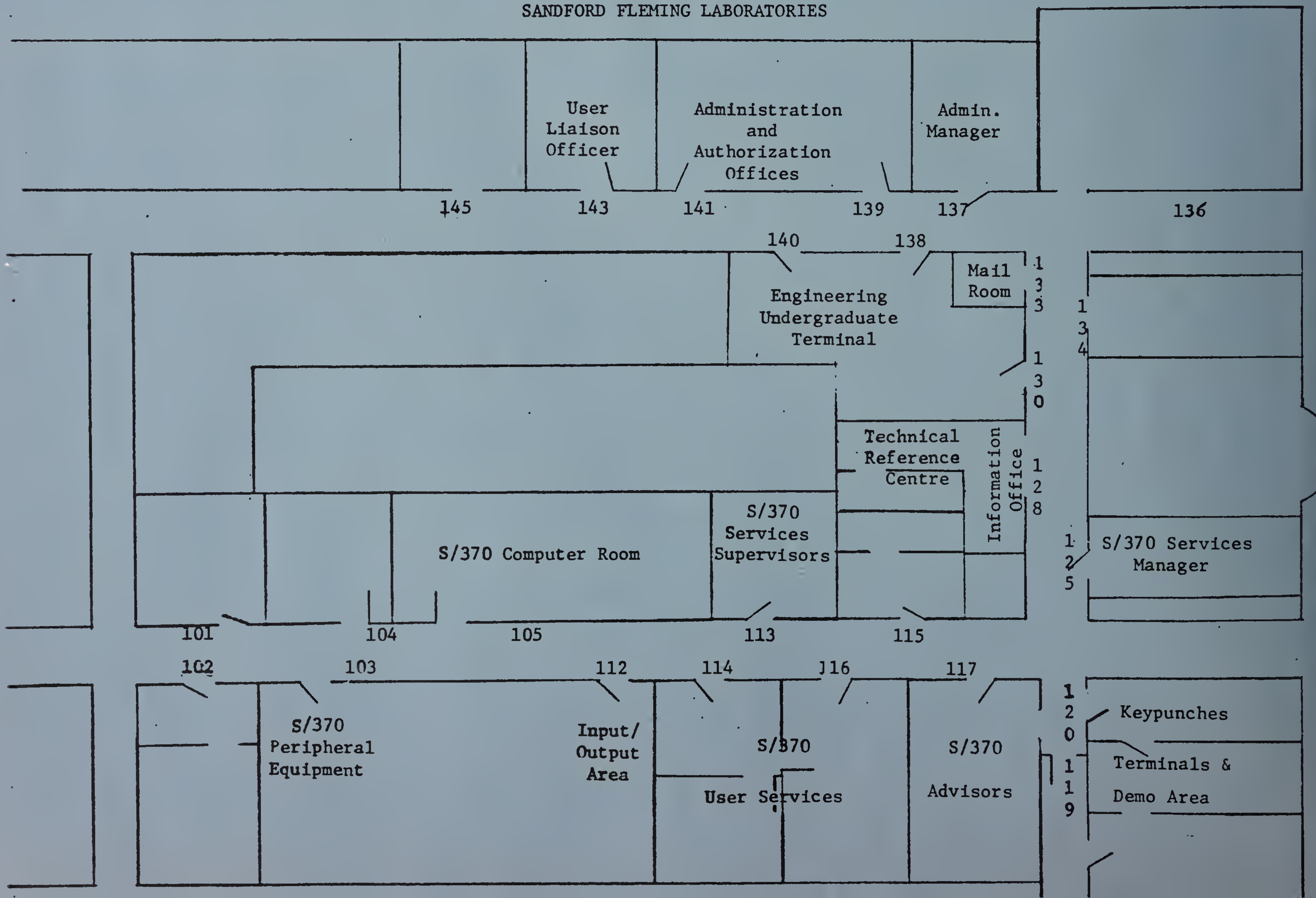




FLOOR PLAN: 12th Floor Burton Tower

FLOOR PLAN: UNIVERSITY OF TORONTO COMPUTER CENTRE

SANDFORD FLEMING LABORATORIES



A NETWORK FORUM

C. A. Ford

On Thursday, February 9th Mr. M. P. Brown of the office of Computer Co-ordination, Council of Ontario Universities, presented the case for the development of a communication network amongst Ontario university computer centres. This presentation was at the invitation of our Vice-Provost, Professor Peter Meincke. A general discussion of the proposal followed the formal presentation by Mr. Brown.

METANET, as it is called, visualizes a set of communication paths amongst nodes of a network. Each node might be associated with a simple input-output terminal facility or with a host computer. This scheme would facilitate the use of any computer resource in the network from any node. The objectives would be to extend the computer services available to any university user without unnecessary replication of facilities at a number of computer centres.

The very lively discussion revolved around problems of the practical utility of such an arrangement and the cost effectiveness of this scheme. Several million dollars of initial investment would be required before any functional utility is established. Alternative ideas for achieving the objectives were put forward and discussed.

It would be difficult to identify more than one particular outcome of these discussions. One outstanding aspect was recognized: real technical possibilities for inter-university computer service sharing exist but the exploitation of these is inhibited by the incomplete development of easy administrative procedures.

An extreme shortage of interested users was noted. Were the University of Toronto users uninterested in the possible impact of service sharing? Do they not need any service not available on this campus? Speculation is rife. We would be pleased to receive your views on the network issue.

MORE IBM SYSTEMS ANNOUNCEMENTS

C. A. Ford

The IBM Company has just announced extensions to their new line of computer products. The accent is on the virtual storage technique. Machines of models 158 and 168 will become available in multiprocessor configurations. New and potentially much improved operating systems will come with them.

Dual processor machines are being referred to as "tightly coupled multiprocessors". Such machines would provide not only a doubling of the actual computational power but also offer important enhancements in system reliability.

A technique known as "loosely coupled multiprocessing" is also being advanced. This is a development of the ASP method of coupled machines. New software will include the Job Entry Subsystem mode 3 (JES3) which is the follow-on to ASP. Wonderful possibilities exist for combining single and multiprocessing systems using JES3.

The second release of OS/VS2 was announced. It includes the JES3 system and its alternative, JES2. The latter is the follow-on to the familiar HASP system and is particularly suitable for single processors or single multiprocessing machines. The second release of VS2 certainly sounds like a great step forward in the areas of operating efficiency and reliability. It is a major rework of OS, not just an add-on to cope with the virtual storage function.

These announcements cast further light upon the prospects for future developments in equipment at UTCC. It is quite clear that IBM is betting wholeheartedly on the virtual storage approach. We must find that combination of established and future equipment and software which will best suit the needs of the University of Toronto users. Our earlier solicitations of your viewpoints on the future have gone largely unanswered. Even if this indicates very general satisfaction with our present services, it remains to be determined what new functions will truly help you and what features will allow us to run still larger workloads at the same level of service. We remain open to your advice and comments.

THE LADY AND THE NEWSLETTER

C. A. Ford

The Computer Science Newsletter is now eight years old. Ninety-seven issues have appeared under four editors since it was created by the late Beatrice Worsley. Its content and value has, we like to believe, expanded greatly in recent years, keeping pace with the continuing growth and change of the computing scene.

Almost four years ago I and the several contributors to these pages felt the impact of a forceful personality, my then-new secretary, Mrs. Ann Herring. Her expediting activities helped to bring in more material and to keep up with regular publishing dates. Ann's secretarial skills were instrumental in improving the style and typographic quality. These efforts eased my task immensely, thus providing a much better publication for you to read. Her other secretarial duties were carried on in equally fine style.

Dr. Wilson and I regret to announce that Ann has left the University in favour of Anglo-Canadian Pulp and Paper Mills, Ltd., effective February 28. We, our computer users and our readers will miss her greatly. Good luck, Ann.

ASIS-73 ANNUAL MEETING

The 36th Annual Meeting of the American Society for Information Science (ASIS) will be held October 21-25, 1973, at the Los Angeles Hilton Hotel in Los Angeles, California.

The general theme of this meeting will be "Information: Benefits and Costs," and will feature short, "10-minute" technical papers, formal debates, panel sessions, and Special Interest Group (SIG) activities.

For further information:

H. W. Jones,
Northrop Corporation,
Aircraft Division,
Hawthorne,
California 90250.

Robert McAfee, Jr.,
ASIS Headquarters,
1140 Connecticut Avenue, N.W.,
Washington, DC 20036.

PERSONNEL CHANGES

J. Shick

There are only a few changes in the staff at the Computer Centre this month.

Angel Wells has left our accounting group and we welcome Lynne Thompson in her place.

Ian Christie joins the Computer Centre as an S/370 administrator working mainly in the area of Personnel. Ian spent almost 3 years as a Personnel Officer with the University of Toronto Personnel Department.

Ian joins John Lees in S/370 administration. John continues some of his former programming responsibilities while assuming some new administrative functions related to equipment and facilities.

EXPANDED FACILITIES IN GEOLOGICAL INFORMATICS MINING BUILDING

F. G. Smith

(The development of GESTAR, a storage and retrieval system for scientific information, was reported in Newsletter #92, September 72. Here follows further news of this service, provided by the Department of Geology. Ed.)

1. An IBM 519 machine for mark-sense card-punching is available in Room 210. This can be used for facilitating objective multiple-choice or true/false testing and computer scoring. Packages of programs of several kinds are available for scoring the students responses and also the efficiency of each of the examination items in discriminating between good and bad students, or for correlating analyses of scores re other variables, etc..

2. Technical translation of Russian literature into good technical English is available on a contract basis (about 5¢ per significant word).

3. Letters and/or envelope addresses translated and typed in correct Russian style on a contract basis (about 10¢ per significant word).

4. Manuscripts of books and papers can be typed in draft, secondary, or final form on a contract basis (about $10 per hour). An MS can contain Greek or other special symbols, subscripts, superscripts, etc.. The final MS can be stored in the University of Toronto Computer Centre computer system for a small extra charge. Bibliographies can be in mixed latin and cyrillic characters.

5. A magnetic card selectric typewriter computer terminal is installed in Room 214. This can use the APL, ATS, CPS, CRJE or teletype systems of communication with the UTCC computers, other computers in Toronto, or any other computers or library, etc., with equipment for receiving data on voice-grade telephone lines anywhere in the world.

6. Technical dictionaries and translation aids are stored in Room 214, also recent computer listings of serials and serial monographs at the National Science Library in Ottawa, and the newest Union List of Scientific Serials in Canadian Libraries. Tables of contents of major journals publishing items on inorganic and physical chemistry are available, also SOURCE INDEX up to the current quarterly.

7. The ALKHAL file of the GESTAR system of information storage and retrieval is available for search, and hard copy of each item of the file is in Room 214. Manuals for users are being prepared: no pricing policy has been established, but early users were given free searches. Currently, any NRC grant-holding user can have a search made for the UTCC cost of the run. Costs are from about $5 to $15, depending on the complexity or length of the boolean expression of descriptors. This bibliographic search system is being run somewhat like the CAN/SDI services from the National Science Library, except that it is fully retrospective and subject-constrained whereas the CAN/SDI searches are horizontal in time but cover the whole range of subjects of interest to geoscientists.

THOSE BLANK DOORS

Ann Herring

The new doors in Sandford Fleming mentioned in Newsletter #96 as presenting a blank and stonewall effect to the user community are about to undergo a change. The Computer Centre has nameplates on order and hope to have them installed early in March. Ah, but you guessed it, Watson! There is a glitch. Are you ready for it...? The whole building is to be re-numbered. The old familiar numbers are now in different areas. Users are requested to make CAREFUL note of the new numbering scheme as outlined on the floor plan on the inside front cover page of this newsletter. Just as a sample, users used to keypunching in 'Room 101' will now find 'Room 101' is the Ladies washroom!

DEPARTMENT OF COMPUTER SCIENCE NEWS

C. Phillips

Computer Systems Research Group

Professor J. J. Horning has agreed to become Chairman of the Computer Systems Research Group starting May 1, 1973. Professor Horning will take over the Chairmanship from Professor E.S. Lee who will be on sabbatical leave throughout the 1973-74 session at Imperial College, England.

The Computer Systems Research Group was established in September 1968, under the joint administration of the Departments of Computer Science and Electrical Engineering. It has been funded under the NRC Negotiated Development Grant. CSRG will continue to play an important role in the coordination of computer research in the Departments of Electrical Engineering and Computer Science.

Visiting Professor

Professor David Handscomb is visiting the Department for the first six months of this year from Oxford, England. Professor Handscomb has edited a book on Numerical Approximation theory and is teaching a graduate course in this area during the spring term.

His current research involves finding a method of getting through the singularities of a system of singular non-multilinear differential equations which arise from a problem in special relativity. The methods he has investigated so far have proved to be unstable. Professor Handscomb would be interested in hearing from anyone interested in this area.

Professor and Mrs. Handscomb have rented a house in Scarborough which they like very much. They have two young daughters, Phyllida,3 and Lucy,2, who are anxiously awaiting their chance to play in deep snow—they won't be disappointed.

Chinese New Year

The beginning of the 'Year of the Ox' was celebrated by some sixty computer science faculty, students and friends on February 2. This annual event was ably arranged this year by Ms. Angie Blonski. The general feeling was that the dinner at the SAI WOO restaurant was the "best ever". After the dinner Frank and Helen Tompa invited everyone to an open house--lots of fun and good cheer!

RECENT ACQUISTIONS IN THE DCS LIBRARY

Aho, Alfred V. and Ullman, J.D. The Theory of Parsing, Translation, and Compiling. v.1.: Parsing Englewood Cliffs, N.J., Prentice-Hall, 1972

Faddeeva, W.N., Ed. Automatic programming and Numerical Methods of Analysis. Translated from the Russian. New York, Consultants Bureau, 1972

Gaines, R. Stockton. The Debugging of Computer Programs. Princeton, N.J., University, 1969. (Ph.D. Thesis)

Hedrick, George Ellwood III. User Error Analysis and Automatic Correction for Compiling. Ames, Iowa State University, 1970. (Ph.D. Thesis)

Levy, Jean-Pierre. Automatic Correction of Syntax Errors in Programming Languages. Ithaca, N.Y., Cornell University, 1971. (Ph.D. Thesis)

Lynch, Michael F. et al. Computer Handling of Chemical Structure Information, London, Macdonald, 1971

McCracken, Daniel D. A Guide to FORTRAN IV Programming. 2nd Edition New York, Wiley, 1972

Symposium on Information Storage and Retrieval, University of Maryland, 1971 Proceedings, ed. by Jack Minker and S. Rosenfeld. New York, ACM, 1971

Yngve, Victor H. Computer Programming with COMIT II. Cambridge, Mass., MIT Press, 1972

S/370 APPLICATION SOFTWARE

W. Hayes

Computer Physics Communications Program Library

The CPC library, distributed from Queen's University, Belfast, contains programs which apply to diverse areas of Physics and Chemistry. Detailed descriptions of the programs are published in the North-Holland Journal 'Computer Physics Communications', which was first published in 1969. The programs themselves are written in an international language (ALGOL or FORTRAN).

The University of Waterloo, through an agreement with Queen's University, Belfast, is making available the programs in the CPC Library to individuals at Canadian Universities. The University of Toronto Computer Centre is pleased to participate in the distribution of these programs to its own computer users. A list of programs currently in this library has been placed in the Information Office. A request for one or more programs from the library may be made to S/370 Users' Services.

Special Functions Package from Argonne National Laboratories

Argonne National Laboratories has recently distributed a package of subprograms, called FUNPACK, for the evaluation of the following six (6) special functions:

1. Exponential Integral
2. Elliptic Integral of the first kind
3. Elliptic Integral of the second kind
4. Dawsons Integral
5. Modified Bessel Functions of the second kind K_0
6. Modified Bessel Functions of the second kind K_1

These subprograms, which have been tested both at Argonne and here, are high quality software items and will be available in the Numerical Methods Library (MATHLIB). Descriptive entries for these subprograms will appear in an update to 3.7 of USERBOOK. Detailed documentation is available in the Information Office.

CYBER-73 AT UNIVERSITY OF WESTERN ONTARIO

J. Wettlaufer

In both the November and December Newsletters of last year, System/370 announced terminal service to a CDC CYBER-73 at the University of Western Ontario. To this date only one user has expressed interest in using this service. If this low demand continues, then System/370 will be unable to guarantee that this service will always be available in the future.

Users who feel Western's computing facilities satisfy a unique need are reminded they may contact:

John Wettlaufer, S/370 User Services
Room 105, Sandford Fleming Laboratories
University of Toronto Computer Centre

(Telephone: 928-6355)

Mr. Ken Roberts of the University of Western Ontario Computing Centre will be at the Computer Centre, University of Toronto on Friday, March 16th to discuss the CDC CYBER-73 hardware and control cards. For more information, please call John Wettlaufer at the above number.

MARKEXAM

S. Rose

MARKEXAM, originated at the University of Western Ontario and developed further by the Universities of Windsor and Waterloo, is a program for marking multiple-choice examinations. The increasing popularity of multiple-choice examinations as a means of testing large numbers of students, and the attendant desire for statistics on both the individuals and the examination questions, resulted in this application of the computer.

When a MARKEXAM test is given, the answers are recorded on special OMR (optical mark read) cards which are filled out with a dark pencil mark that can be read by an IBM 2501 card-reader, modified to detect these marks. The deck of answer cards is then submitted to the computer with the master answer card and the marking control cards which have the examiner's desired marking and output options. MARKEXAM then compares the master answers with the student responses and compiles statistics on the test and on the examined class.

The general results produced are: mean raw score and standard deviation for the test, section averages if the class consists of different sections, raw score, student rank, percentage, standard score, letter grade, item analyses for each question on the examination, histograms of marks and response patterns, and various other optional output. The examiner can also decide on the amount and types of analyses produced such as weighted questions, deleted questions, survey questions and four different marking methods.

MARKEXAM does have some limitations. It will accept a maximum of 450 questions on the examination with five choices or less on each question and only one correct answer. True or false questions are treated as two-choice questions and require only two of the five answer spaces available. Other than that, MARKEXAM can handle an almost unlimited number of students.

The major advantages of a marking system like this are speed and accuracy of calculation. The examiner can usually give the exam one day and have the results back the next day. MARKEXAM turns several man-hours of marking into a few seconds on the computer and at a very reasonable cost. This cost varies directly as the number of students examined and as the number of questions on the examination. A fifty question test of seventy students has been run for about $3.00 on the System/370 at priority 4.

It is hoped that eventually the marking of tests, the accumulation of the student's marks through the year and the calculation of his final marks will be able to be processed by a computer.

For more information on MARKEXAM see Mr. Stan Yagi, Sandford Fleming Building, Room 112, phone 928-7331.

OBTAINING PROGRAMS

H. Kugel

Users may have noticed that in the last issues of the Newsletter, we have been describing a series of user utility aids that have been obtained from various IBM and non-IBM distributing agencies such as the SHARE program library.

These utilities were:

a) NIBSIO: an Input/Output package for Assembly Language Programs.

b) ISAM: a series of diagnostic tools for ISAM dataset users.

c) OVERLAY: a tool for the analysis of linkage editor overlay structures.

d) PROGLOOK: a tool for dynamic monitoring of user programs.

Currently, more packages are being obtained and evaluated. All these programs will be documented in updates to USERBOOK, but in the meantime if a user has any questions he should contact Herb Kugel at 928-7286. UTCC also has the IBM Program Information Department Catalogue which lists a great many complete programs that have been donated either by IBM itself or various other 360/370 installations. Although these programs are not supported, many of them work quite well and some are quite sophisticated as to applications. Occasionally, users have taken one of these packages "as is", finding it cheaper and easier to use than to "reinvent the wheel" and go into a major coding effort. Normally source statements are also distributed with the programs so modifications can be made, if this should be needed.

If you are considering a major package or if you would just like to know what is available please call Herb Kugel at 928-7286.

UPDATES ISSUED FOR USERBOOK SECTION 3

J. Campbell

Pages added, and/or replaced by updates:

December 31/72 -- 3.0010*
3.0010-2*
3.2280 Temporary Update
3.2280-1 Temporary Update

January 2/73 -- 3.2280-11 Temporary Update
3.2280-12* Temporary Update

December 31/72 -- 3.4
3.4020-2
3.4020-4
3.4100
3.4110
3.4130
3.4140
3.4160-2
3.4255
3.4270
3.4280
3.4297
3.4297-2
3.4315
3.4315-2
3.4345-2
3.4500-2

January 29/73 -- 3.9903*
3.9903-2*
3.9903-3*
3.9903-4*
3.9903-5*
3.9903-6*
3.9903-7*
3.9903-8*
3.9903-9*
3.9

February 5/73 -- 3.6145
3.9903-10*

*new page

INTERACTIVE SYSTEMS RELIABILITY

S. Goldfarb

The uptimes achieved in January for each of APL, ATS and CPS were 99.69%, 99.67% and 99.64%, respectively. In addition to the scheduled hours of operation, APL, ATS and CPS were available during approximately 112 hours of unscheduled weekend time.

The following table summarizes the time lost out of scheduled hours of production for the period January 1 through January 31, 1973. The total number of scheduled hours of operation during this period was 525 (including the January 1 holiday). There was one late start due to a fault in the 1052 console; the time lost was 47, 49 and 51 minutes for APL, ATS and CPS, respectively. The table shows the time lost due to system failures for each of the systems: three unscheduled IPL's were required as a result of the failures.

DATE	DOWNTIME (mins)			REASON
	APL	ATS	CPS	
Tue. Jan. 2	18	20	22	*Humidity Problems
Tue. Jan. 16	17	19	22	*Disk Drive Failure (hardware)
Mon. Jan. 22	14	17	19	*Undetermined
Totals	49	56	63	*IPL Required

System Failures January 1 to January 31, 1972

APL CHANGES

S. Goldfarb

A new version of APL was introduced on January 29. The new features (prepared by I. P. Sharp Associates Limited and Scientific Time Sharing Corporation) include:

- support of Teletype 33/35 for function execution and data input/output

- command for preventing messages from reaching the terminal as a means for ensuring that special output (e.g. a graph) is not interrupted in the middle of printing

- facility for loading a workspace from within a function (autoload)

- facility for automatically beginning execution of an APL expression after a workspace load

For further details see item 11 in Workspace 1 NEWS.

GENERAL NEWS

J.R. McBride

CRF Users' Meeting

The January CRF Users' Meeting was held in the Sandford Fleming Laboratories, SF2689, on Friday 26th January 1973.

Discussion at the meeting centered around the merger, the graphics service and the installation of the additional core memory on the S/360-44.

The next CRF Users' Meeting will be at 3:00 p.m. on Friday 23rd February, 1973. All CRF users are invited to attend.

Staff Changes

We are pleased to announce that Mr. Malcolm Hindley-Smith has joined the CRF staff as the head of a new section called "Research Applications". Mr. Hindley-Smith will be responsible for keeping researchers informed of CRF's facilities and keeping CRF informed of the researchers' needs.

Malcolm joins CRF from the Control Data Corp. where he was Manager of Simulation.

At the same time as CRF gained Malcolm we lost Lynne Milland to the Provincial Department of Education. Lynne was with CRF for over three years and made a considerable contribution to CRF in that period. We wish her well in her new job.

Jim Small a computer operator at CRF for the past year has left to join the Addressograph-Multigraph of Canada Ltd.

Expansion of the S/360-44 Core Memory

The expansion of the S/360-44 core memory from 256K to 448K is now well under way. The final installation is now expected for mid or late March.

Users are reminded that during the installation and debugging stages, blocks of time between 10:00 p.m. and 8:00 a.m. will be reserved. Grade A operators should check the S/360-44 log book before coming in at night or at the weekend.

New Recording equipment for RADDT Users

A new audio tape recorder has been purchased for use with the RADDT system. RADDT users should contact Clyde Stevens in the CRF laboratory or telephone 8853 for more details.

Keys for the Sandford Fleming Building

We announced in Information Bulletin IB21:72 that locks had been installed in the doors at the foot of the stairs in the Sandford Fleming Laboratories. However, it seems that the locks are not yet in operation due to a missing part. The part is expected "any day now," therefore the previous warning still stands. Grade A operators should be prepared and obtain building keys as soon as possible.

NEW DOCUMENTATION AVAILABLE

PALD 360

The PALD 360 User's Guide has been added to the Documentation Library (LDOC). This a PDP-8 assembler that can be assembled on the S/360-44 and punched on paper tape on the PDP-8. This saves a great deal of time for medium to large assemblies.

DAMP (Digital-Analog Modeling Program)

DAMP is a FORTRAN IV program designed to allow the user to simulate the usual analog computer functions on the S/360-44 digital computer. Due to the characteristics of the digital machine and its software support, some additional functions not usually found on analog machines may be offered with little effort.

DAMP allows 44 unique "commands" or block functions to be used. These commands are defined in detail in the paper. Two types of function generator are available, allowing great flexibility in the use of special functions. A run control card language allows flexible control over the actual execution of the configuration, allowing parameter and configuration alterations during a run.

At each stage during program set-up and execution, full diagnostic messages are given in case of errors. Warning messages indicate to the user that the DAMP system has made an assumption regarding the correct form of input when redundant data appear. Warnings do not terminate the run, but of course, the results may be incorrect due to the condition which caused the warning.

The program needs at least 196K to run.

The DAMP User's Manual (96 pages) is available on CRF's Documentation library by running the LDOC procedure:

```
//        JOB card
//        EXEC LDOC,NAME='DAMP'
```

A catalog procedure for DAMP has been added to PROCLIB contact Ken Weir, Room SF2740 or phone 5271 for details.

CSMP (Continuous System Modeling Program)

This program is now up and running on the S/360-44.

For information about CSMP see IBM manual System/360 Continuous, System Modeling Program User's Manual H20-0367.

There exists a catalogue procedure in PROCLIB so that CSMP is callable as follows:

```
//        JOB card
//        EXEC CSMP
//CSMP.SYSIN DD  *
```

See Ken Weir, Room SF2740 or phone 5271 for full details.

VISITORS TO THE CRF LABORATORY

The following people visited the CRF laboratory between December 7th, 1972 and February 8th, 1973:

Professor R. McLaughlin and Miss Janet Harris (Virginia Common Wealth University, Richmond, Virginia), Professor A. Moles (University of Strasbourg, France), Professor A. Rockman (York University), Miss E. Molnar (University of Toronto), Mr. Jean-Luc Antosik (Ecole Centrale, Paris, France), Mr. Dewi Williams and Mr. J. Dereguanceurt (Bell Northern Research, Ottawa), Mr. R.A. Lemos, Mr. Ian McArthur and Mr. P.J. Thomas (IBM, Toronto), Professor Barbara Silver (University of Manitoba), Professor C.A.R. Hoare (Queen's University, Belfast, Northern Ireland), Mr. Henry W. Courtney, Mr. John Manzara, Mr. David Keffer, Mr. John Zaharychuk (Purdue High School, Oakville), Mr. L.T. Campbell and 70 members of the University Parent Guild, Mr. Jim De Boer (Computer System Research Group, University of Toronto), Mr. Adrian Sirell (University of Toronto Extension Division), Mr. S.S. Jaharomi and Mr. B. Roots (Zoology Department, University of Toronto), Mr. J.P. Carver (Medical Cell Biology, University of Toronto), Dr. D.H. Carmack (Anatomy Histology, University of Toronto), Mr. J. Paloheimo (Zoology Department, University of Toronto), Dr. W.M. Brown (Anatomy, University of Toronto), Professor J.C. Ogilvie and 10 students (Institute of Applied Statistics and Department of Psychology), Mr. Paul Mollon (Memorex, Canada), Mr. Carl Schwarcz (Guelph, Ontario.)

REVISED CRF STAFF DIRECTORY

The following staff directory contains the recent changes in CRF and the new room numbers for the second floor Sandford Fleming Laboratories.

Sections/Names	Telephone	Old Room #	New Room #
Enquiries			
F.E.M. Halls	8946	SF2740	SF214
Manager			
J.R. McBride	4086	SF2740	SF214
Secretary			
T.A. Holland	4086	SF2740	SF214
Account Services			
B.J. King	6326	SF2740	SF214
Data Acquisition Services			
T.C. Stevens	8853	SF2770	SF207
A. Bakumenko	6350	SF2786	SF203
G. Thorn	6350	SF2786	SF203
Operations			
K.C. Patnaik	8853	SF2770	SF207
B.P. Leger	8853	SF2770	SF207
Research Applications			
M. Hindley-Smith	8992	SF2740	SF214
Software Services			
D.R. Smith	7133	SF2740	SF214
K.D. Weir	5271	SF2740	SF214

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	49 St.Geo	6496
ASSISTANT DIRECTOR		
C. Alan Ford	49 St.Geo	2991
USER LIAISON OFFICER		
Bill Greene	SF143	2694
Information Office	SF128	4990 or 4991
ADMINISTRATION MANAGER		
Jerry Palter	SF137	8948
AUTHORIZATION CLERKS		
Nancy Pocock (S/370 + 7094)	SF139	8702
Yvonne Davis (Interactive)	49 St.Geo	8703
S/370 SERVICES		
MANAGER		
Dave McNaughton	SF125	6281
INPUT/OUTPUT SUPERVISOR		
Derry Cox	SF113	7092
USER SERVICES SUPERVISOR		
Stan Yagi	SF113	7331
SYSTEMS SUPPORT SUPERVISOR		
Rein Mikkor	SF113	5058
PROGRAM ADVISORS	SF117	8599
INTERACTIVE TERMINAL SYSTEMS		
MANAGER		
Sam Goldfarb	49 St.Geo	3787
7094 SERVICES		
MANAGER		
Joyce Walton	BT1207	7094

JOB STATUS QUERIES:	
SYSTEM/370	7373
7094	7094
INTERACTIVE TERMINAL SYSTEMS:	
System Status	6234
APL	7200
ATS	7100
CPS	6200
CONVERSATIONAL REMOTE JOB ENTRY (CRJE)	
2741: Tel:	7223 7381 7386
TTY:	7445

UTCC COMPUTER EQUIPMENT

(a) SYSTEM/370 MODEL 165

- located in SF 106/110/111
- provides General Purpose Job Stream, High Speed Job Stream and Conversational Remote Job Entry services
- 2048K bytes of core
- 1 drum
- 6 disk drives IBM (3330)
- 8 disk drives IBM (2314)
- 6 magnetic tape drives (6 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 7 remote batch terminals
- 1 paper tape reader
- CALCOMP plotter (11" and 30")

- OS/MVT with HASP

(b) SYSTEM/360 MODEL 65

- located in Room 333 McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 16 disk drives (2314)
- 2 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 120 typewriter terminals

- OS/MVT with APL, ATS, and CPS

(c) 7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

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